Claims Listing:

1. (canceled)
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18. (canceled)
19. (amended) A system comprising:
    a. a Fast Fourier Transform (FFT) block that receives as input a digital signal representing activity in the frequency band and computes FFT values for a plurality of frequency bins for a time interval; and
    b. a power calculation block coupled to the FFT block that computes the power at each frequency bin at each time interval~~, wherein the power is supplied as input to the peak detector~~;
    c. a peak detector that receives as input output of the power calculation block for successive time intervals of activity in a frequency band, detects one or more peaks in the spectral information and outputs information identifying peaks for each time interval; and

d. at least one pulse detector coupled to the peak detector, the pulse detector detects signal pulses that satisfy one or more characteristics based on the output of the peak detector.

20. (original) The system of claim 19, and further comprising a memory that stores one or more of:

a. a running sum of the power at each frequency bin over time intervals;

b. a duty count comprising a running sum at each time interval of the number of times the power at each frequency bin exceeds the power threshold;

c. a maximum power for each frequency bin for the current and prior time intervals; and

d. a running count of the number of time intervals in which a certain number of peaks have been detected.

21. (original) The system of claim 19, and further comprising a memory controller coupled to the memory, wherein a pulse detector outputs a trigger signal in response to detecting a certain type of pulse, and wherein the trigger signal is coupled to the memory controller to write to the memory the output of the power calculation block for one or more time intervals.

22. (original) The system of claim 19, and further comprising an RF receiver that downconverts signals received in the frequency band to a baseband signal and an analog-to-digital converter coupled to the RF receiver that converts the baseband signal to a digital signal, wherein the RF receiver is configurable to operate in a wideband mode whereby it downconverts energy in the entire frequency band, or in a narrowband mode whereby it downconverts energy in a portion of the frequency band.

23. (original) A method for detecting signal pulses comprising steps of:

a. detecting one or more peaks in spectral information representing activity in a frequency band;

b. detecting signal pulses that meet one or more characteristics from the detected one or more peaks; and

c. outputting for each detected signal pulse, one or more of the power, bandwidth, center frequency and duration of the signal pulse.

24. (original) The method of claim 23, wherein the step of detecting a peak comprises detecting power values above a threshold at a contiguous set of frequencies.

25. (original) The method of claim 23, wherein the step of detecting a peak comprises detecting power values that exceed the threshold at contiguous Fast Fourier Transform (FFT) frequency bins.

26. (original) The method of claim 23, and further comprising the step of providing for each detected peak, data including the maximum power value for each peak and frequency bins spanned by the peak.

27. (original) The method of claim 23, wherein the step of detecting a signal pulse comprises detecting, from the peaks, signal pulses of multiple types using an associated set of ranges for one or more of bandwidth, center frequency and duration.

28. (original) The method of claim 23, and further comprising the step of storing digital signals representing samples of a received signal when a pulse of a particular type is detected.

29. (canceled)

30. (original) A method for buffering digital signals representing samples of received radio frequency energy in a radio frequency band, comprising a step of, storing the digital signals and data indicating time of occurrence of the digital signals in a first-in first-out buffer in response to a trigger signal.

31. (original) The method of claim 30, wherein the step of storing comprises continuously storing the digital signals and stopping storage of the digital signals in response to the trigger signal.

32. (original) The method of claim 30, wherein the step of storing comprises storing the digital signals for a period of time after the trigger signal.

33. (original) The method of claim 30, wherein the step of storing comprises storing the digital signals for a period of time after a first trigger signal and stopping storage of the digital signals in response to a second trigger signal.

34. (new) A spectrum analysis system comprising:

a. a Fast Fourier Transform (FFT) circuit that receives as input a digital signal representing received energy for a FFT interval in a frequency band and computes FFT values for a plurality of frequency bins; and

b. a power calculation circuit coupled to the FFT circuit that computes the power at each frequency bin for an FFT interval and outputs a power value for each frequency bin; and

c. a duty count circuit coupled to the power calculation circuit that, for an FFT interval, compares the power value for each frequency bin with a threshold and increments a count value when the power value is at or exceeds the threshold for each frequency bin.

35. (new) The spectrum analysis system of claim 34, wherein the duty count circuit compares the power value for each frequency bin with a threshold for a plurality of FFT intervals taken over a time period.

36. (new) The spectrum analysis system of claim 35, and further comprising a memory that stores an indication of the duty cycle for each frequency bin based on the output of the duty count circuit.

37. (new) The spectrum analysis system of claim 36, and further comprising a processor that generates, based on duty cycle count data stored in the memory, display data for a graph that indicates how often the received energy power is at or exceeds the threshold at frequencies of a frequency band.

38. (new) A method for analyzing energy in a frequency band, comprising:

a. receiving energy in a frequency band;

b. generating a digital signal representing the received energy;

c. computing a Fast Fourier Transform (FFT) from the digital signal to generate FFT values for a plurality of frequency bins for an FFT interval;

d. computing the power at each frequency bin to produce a power value for each frequency bin for an FFT interval; and

e. comparing the power value for each frequency bin with a threshold to increment a count value when the power value is at or exceeds the threshold for each frequency bin.

39. (new) The method of claim 38, and further comprising repeating (c) computing, (d) computing and (e) comparing for each FFT interval taken from the digital signal, and further comprising tracking the count value for each frequency bin over a plurality of FFT intervals that spans a time period.

40. (new) The method of claim 39, and further comprising storing the count values for each frequency bin for the plurality of FFT intervals.

41. (new) The method of claim 39, and further comprising displaying a graph that indicates how often the received energy power is at or exceeds the threshold at frequencies of a frequency band based on the count values for each frequency bin.